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Date: **July 18, 2005**

To: **Examiner David England**
Art Unit 2143 (Phone Number (571-272-3912)

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From: **Joseph A. Nguyen, Esq. (Reg. No., 37,899), Attorney for Lam Research Corporation (Assignee).**

Re: Application No. 09/539,313 entitled "Plug And Play Sensor Integration For A Process Module," filed March 30, 2000. (Our docket No. LAM1P136/P0602) by Huang et al.

Total Pages (including this cover sheet): 4

MESSAGE:

Dear Examiner England,

As requested, these are the discussion points I wish to go over during our discussion on Tuesday, July 19, 2005. Thank you very much for agreeing to discuss the case with me.

I believe, after reading the prior art Kail, Steen and Nakamura multiple times, that I have a clear understanding of what they teach and what they are silent on.

If you find my interpretation of the prior art Kail, Steen and Nakamura inaccurate, I would consider the discussion a success if I could be corrected as to my interpretations and have a clearer understanding of your interpretation so I can more productively move this case forward.

I very much look forward to our discussion.

Best Regards,

Joseph A. Nguyen, Esq.

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1) Problem Background: Different sensors have different data specifications. Besides the fact that different sensors report using different types of data (Boolean vs. integers vs. float), the data specifications of different sensors may also specify different data ranges (e.g., millivolts versus kilovolts), different data measurement frequencies (e.g., milliseconds verus minutes), etc.
See specification at page 8 lines 14-31.

2) Problem to be solved: Since the central unit cannot be programmed in advance to take into account all sensors existing or sensors to be developed, how can the central unit (the "process module computing system 20" in our case) understand what is being sent from any generic sensor?

3) Our approach: Plug-and-play sensor integration (see title). The remote sensor automatically informs the central unit of the data specifications so the central unit knows what the data specification for the remote sensor is. See specification at page 8, lines 17-29. This way, any generic remote sensor, even off-the-shelf sensor developed after the central unit is deployed, can be used in a plug-and-play fashion, and the central unit would know the sensor's data specification since it is automatically informed before hand.

4) Solution proposed by Kail (6,225,901). Put the responsibility on the remote unit to conform to what the central unit needs to understand. Make the remote unit format the data before sending to the central unit. In other words, Kail assumes that the remote unit has this ability to format, or can be programmed with the ability to format, sensor data so the central unit can understand. One can only assume that the "formatting" process at the remote unit ensures that the data will be in a format understood by the central unit. All Kail said was "upon receipt, the central monitoring device processes the received message and stores the data in a database associated with the sending portable monitoring unit 12"

Note: This is different from our approach, which does not put the responsibility on the remote sensor to format the data to conform to the requirements by the central unit. Accordingly, our approach does not always require the ability of the remote unit to

format data to conform to what the central unit can understand. The problem is that, for example, if the remote unit is off-the-shelf, such programming of the remote unit is often not possible.

5) Solution proposed by Steen (6,510,350). Steen is silent with regard to what to do if the remote unit communicates using a data specification that is different from that used by the central unit. Steen simply assumes that the central unit ("operating software on the system provider's server") can understand the data being received from the CFU (Cybersensor field units).

Although column 3, lines 33-56 seems to broadly talk about updating "sends request to update a field parameter or request for up-to-date sensor data", a more in-depth reading reveals that Steen suggest that a user can update the CFU (Cybersensor Field Unit) via a servlet (such as the CyberVIP module or more specifically the CyberVIP screen). The field parameters of a CFU can be updated by a user via the CyberVIP screen ("A request to update a field or data parameter is accomplished by clicking on the "UPDATE" button in the CyberVIP or any software module that allows the parameters to be updated." See Steen column 8, lines 12-15). The servlet (e.g., CyberVIP) can also be used by the user to obtain up-to-date sensor data from the CFU.

Note: Steen does not address the problem of data specification mismatch. At best, Steen assumes that the user will manually change the field parameter at the CFU if needed.

6) Solution proposed by Nakamura (6,233,492). Like Steen, Nakamura is silent about the possibility that the sensor units may have different data specifications and how to inform the central unit of the data specification of a given sensor unit. Nakamura is directed toward averaging control load so as to reduce data traffic congestion improve control stability. Nakamura is cited as a secondary reference in paragraph 10 of the Office Action to supply the features of "the process module having a process chamber, initializing the first sensor, which is able to measure a first parameter in the process chamber.")

My proposal for amended claim 1: We more clearly recite the automatic transmission of the reportable specification from the sensor to the central unit. This facilitates the plug-and-play integration. We also gate this transmission on the receipt of the command to get reportable specification. We also clearly specify that the reportable specification at least specifies the data type of what the sensor intends to send.

1. (Proposed) A computer implemented method for communicating between a computing system of a process module, wherein the process module has a process chamber, and a first sensor, comprising the steps of:

initializing the computing system of the process module;

initializing the first sensor, which is able to measure a first parameter in the process chamber;

transmitting a connect message from the first sensor to the computing system of the process module;

transmitting a command to get reportable specification~~, which informs the process module computing system of the type of data that will be provided from the first sensor,~~ from the computing system of the process module to the first sensor; and

automatically transmitting, upon receiving the command to get reportable specification, a reportable specification message from the first sensor to the computing system of the process module, the reportable specification being configured to inform the computing system of the processing module at least the data type transmitted by the first sensor.